



Danmark

## Marine Equipment Directive EC Type Examination Module B Certificate

This is to certify that TÜV SÜD DANMARK ApS did undertake the relevant type approval procedures for the equipment identified below, which was found to be in compliance with the Marine Equipment Directive (2014/90/EU) requirements, under the following Implementing Regulation for the listed types of equipment

<b>Implementing Regulation</b>	<b>(EU)2023/1667</b>
<b>Certificate Holder and Manufacturer</b>	<b>Raymarine Limited Marine House Cartwright Drive Fareham United Kingdom PO15 5JR</b>
<b>EC Representative</b>	<b>ChartWorld GmbH Atlantic-Haus Zirkusweg 1 20359 Hamburg Deutschland</b>
<b>Product(s)</b>	<b>Pathfinder 16 CAT3 Radar System Pathfinder 19 CAT3 Radar System Pathfinder 22 CAT2 Radar System Pathfinder 24 CAT2 Radar System</b>
<b>Product Sector</b>	<b>Navigation Equipment</b>
<b>Product Type</b>	<b>MED/4.64 Radar Equipment (CAT 2 and CAT 3)</b>

and on the basis of the Technical Data and information detailed in the Annex to this certificate.

Valid from: 28 February 2024

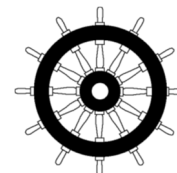
(Thomas J. Twynam)

Expiry Date: 27 February 2029

This certificate has been issued in accordance with the TÜV SÜD Testing, Certification Validation and Verification Regulations and constitutes page 1 of the combined Certificate and Annex.

The Conditions for the validity of this certificate are listed in the Annex.

For further details, related to this certification please contact [BABT@tuvsud.com](mailto:BABT@tuvsud.com)

**2443**

Issued by TÜV SÜD DANMARK ApS under document number: DK-MED000163 Issue 01

Page 1 of 4

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# Annex to Marine Equipment Directive Module B Type Examination Certificate

## 1 Equipment Description

Radar System (Category 2 and Category 3)

### 1.1 Models

Model
Pathfinder 16 CAT3 Radar System
Pathfinder 19 CAT3 Radar System
Pathfinder 22 CAT2 Radar System
Pathfinder 24 CAT2 Radar System

#### 1.1.1 System Components<sup>Note 1</sup>

Model	Description
E70661-IMO	Pathfinder 16" Radar Display
E70662-IMO	Pathfinder 19" Radar Display
E70663-IMO	Pathfinder 22" Radar Display
E70664-IMO	Pathfinder 24" Radar Display
E70621-IMO	Cyclone Pro Open Array 110W Pedestal
E70630	Cyclone 6 ft Antenna
E70648	VCM100 Voltage Converter Module
A80792	Pathfinder Data Collection Unit (DCU)
A80788	Pathfinder Trackball

### 1.2 Software<sup>Note 2</sup>

Identity	Description
Pathfinder Application Software	Version 1.0
Operating SW Raymarine Lighthouse	Version 4.5
Cyclone Pro Software	Version 2.41
Pathfinder DCU	Version 2.007

## 2 Specified Requirements

### 2.1 Implementing Regulation (EU)2023/1667 MED/4.64 Row 2 of 2<sup>Note 3</sup>

Type approval requirements	Carriage and Performance Requirements
SOLAS 74 Reg V/18 IMO Res.MSC.36(63)-(1994 HSC Code) 14 IMO Res.MSC.97(73)-(2000 HSC Code) 14	SOLAS 74 Reg. V/19, IMO Res. A.278(VIII), IMO Res. A.694(17), IMO Res. MSC.36(63)-(1994 HSC Code) 13, IMO Res. MSC.97(73)-(2000 HSC Code) 13. IMO Res. MSC.191(79), IMO Res. MSC.192(79), IMO Res. MSC.302(87), IMO MSC.1/Circ.1349, ITU-R M.1177-4 (04/11).

# Annex to Marine Equipment Directive Module B Type Examination Certificate



Danmark

Assessed Testing Standards	
IEC 60945:2002 incl. IEC 60945 Corr. 1:2008	IEC 61162-1:2016
IEC 61162-2 Ed.1.0:1998-09	IEC 61162-450:2018
IEC 62288 Ed. 3.0:2021	IEC 62388 Ed. 2.0: 2013-06 incl. IEC 62388 Corr 1:2014
IEC 62923-1:2018	IEC 62923-2:2018.

## 3 Technical Documentation

### 3.1 Declaration of Conformity

DOC EU Modified 26/02/2024

### 3.2 User Guide

Pathfinder Radar System Installation & Commissioning Instructions 81417 Revision 3  
Pathfinder Display Operator's Instructions 81416 Revision 2

### 3.3 Test Reports

#### 3.3.1 IEC 60945:2002 incl. IEC 60945 Corr. 1:2008

TRA-057423-38-00B	Issued	2022-05-19
TL22253	Issued	2022-07-04
75958876-04 Issue 02	Issued	2024-02-23
16R096CR	Issued	2016-03-03
75958876 Report 02 Issue 1	Dated	2024-01-16
Salt Mist Waiver	Dated	2024-02-26
Salt Mist Waiver - NSI	Dated	2024-02-21
Salt Mist Waiver - DCU	Dated	2024-02-21
11656-R01	Dated	2024-02-26

#### 3.3.2 IEC 62388 Ed. 2.0: 2013-06 incl. IEC 62388 Corr 1:2014

TP_0953_1048 Wind_Tunnel ESO Test v1	Dated	2021-05-04
596704-1-1	Dated	2021-02-17
75958876 Report 01 Issue 2	Dated	2024-02-23
75950287-04 Issue 01	Issued	2021-04-23
RAY-PFR-STR-001 Issue 1	Dated	2024-02-12

#### 3.3.3 IEC 62288 Ed. 3.0:2021

75958876 Report 02 Issue 1	Dated	2024-01-16
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#### 3.3.4 IEC 61162-1:2016, IEC 61162-2 Ed.1.0:1998-09 & IEC 61162-450:2018

19/N0584	Dated	2019-12-09
75958876 Report 06 Issue 1	Issued	2024-02-16
75958876 Report 08 Issue 1	Issued	2024-02-27
75958876 Report 09 Issue 1	Issued	2024-02-22
75958876 Report 10 Issue 1	Issued	2024-02-22

#### 3.3.5 IEC 62923-1 & IEC 62923-2 :2018

75958876 Report 06 Issue 2	Issued	2024-02-20
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Danmark

# Annex to Marine Equipment Directive Module B Type Examination Certificate

## 3.4 Build Status

### 3.4.1 Hardware

Pathfinder Hardware Data Pack Revision 1, RAY_PF_DP_0001	Dated	2024-02-23
DP076-P1B6_Schematic	Dated	2024-02-23
DP076-P1B6_BOM	Dated	2024-02-23

## 3.5 Notes

- Note 1 Installations should include only one radar scanner connected to a single display.
- Note 2 This approval remains valid for equipment including subsequent minor software amendments which have been formally accepted in accordance with the Testing, Certification, Validation and Verification Regulation.
- Note 3 The product(s) listed meet(s) the requirements of IEC 62923-1 for EUT function type P.

## 4 U.S. Coast Guard Number

This product has been assigned U.S. Coast Guard Module B number

165.116/EC2443 CAT 2 Radar  
165.117/EC2443 CAT 3 Radar

To note type approval to Module B only as it pertains to obtaining US Coastguard approval as allowed by the "Agreement between the European Community and the United States of America on Mutual Recognition of Certificates of Conformity for Marine Equipment", Decision No. 1/2023 signed May 26<sup>th</sup>, 2023.

## 5 Conditions of Validity

This certificate ceases to be valid if the manufacturer makes any changes or modifications to the approved type of equipment, which have not been notified to, and agreed with TÜV SÜD DANMARK ApS or a person appointed by TÜV SÜD DANMARK ApS to perform that role.

During the period of validity of this certificate the applicable regulations (international conventions and relevant resolutions and circulars of the IMO) and testing standards of the Commission Implementing Regulation may change, therefore the product conformity may need to be re-assessed by TÜV SÜD DANMARK ApS.

The Mark of Conformity may only be affixed to the above type approved equipment and a manufacturer's Declaration of Conformity issued when the production-control phase module (D, E, or F) of the directive is fully complied with and controlled by a written inspection agreement with a notified body.

Signature: *T. J. Twynam*  
(Thomas J. Twynam)

Date: 2024-02-28

On behalf of TÜV SÜD DANMARK ApS